US008026631B2

(12) **United States Patent**
Stoner et al.

(10) **Patent No.: US 8,026,631 B2**
(45) **Date of Patent: Sep. 27, 2011**

(54) APPARATUS AND METHOD PERTAINING TO PROVISION OF A SUBSTANTIALLY UNIQUE AIRCRAFT IDENTIFIER VIA A SOURCE OF POWER

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **12/776,035**

(22) Filed: **May 7, 2010**

(65) **Prior Publication Data**

US 2010/0219683 A1 Sep. 2, 2010

Related U.S. Application Data

(63) Continuation of application No. 12/430,437, filed on Apr. 27, 2009, now Pat. No. 7,880,325, and a continuation of application No. 11/549,887, filed on Oct. 16, 2006, now abandoned.

(51) **Int. Cl.**
B60L 1/00 (2006.01)

(52) **U.S. Cl.** **307/9.1**; 307/43

(58) **Field of Classification Search** 307/9.1, 307/43, 31

See application file for complete search history.

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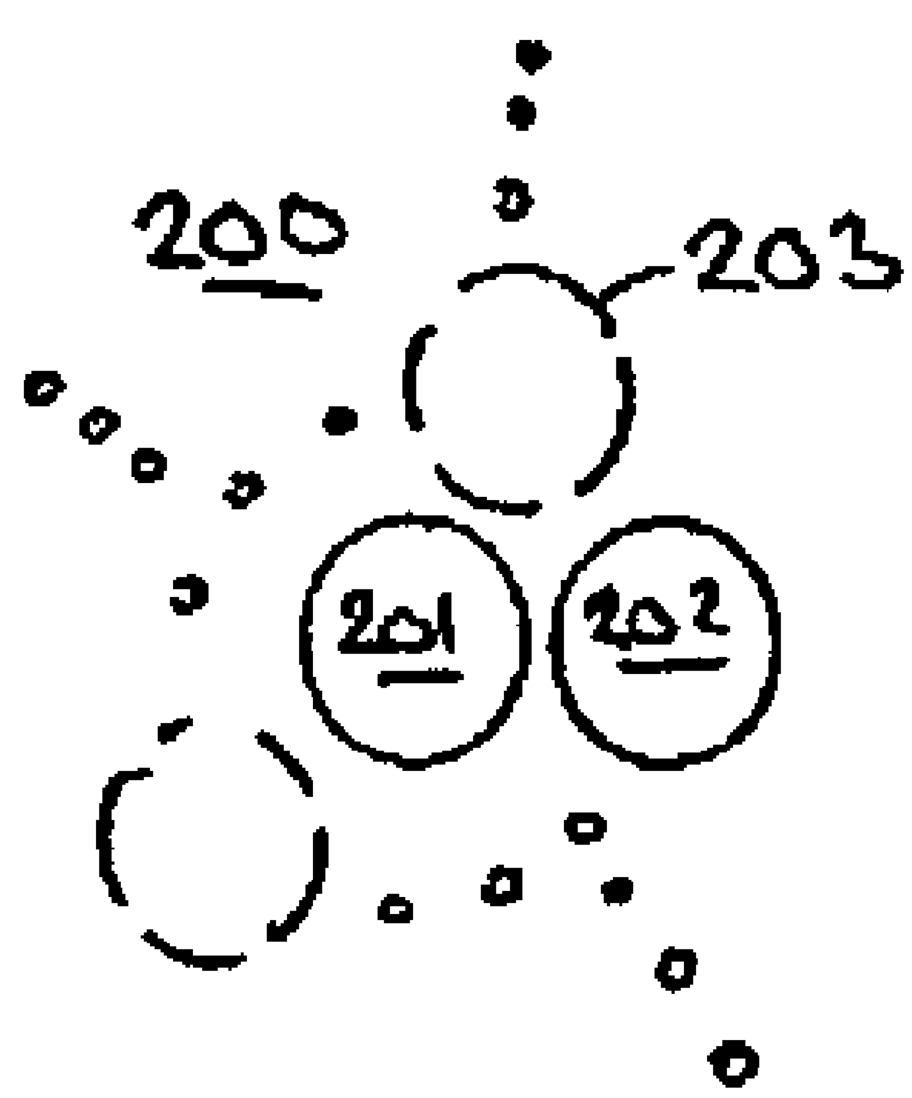
(57) **ABSTRACT**

A vehicle such as an aircraft (**400**) is provided (**101**) with a source of power having a power output such as a source of light (**401**). This power output can then be combined with an identifier (**103**, **416**) that is substantially unique to the aircraft. An optical conduit (**405**) can then be used (**104**) to couple this source of light to a light-to-electricity conversion apparatus (**406**). So configured, the optical conduit delivers light from this source of light to the light-to-electricity conversion apparatus such that the light source then serves as a source of electricity in the vehicle and as a source of a substantially unique identifier as corresponds to the vehicle is available for such use as may be appropriate.

21 Claims, 2 Drawing Sheets



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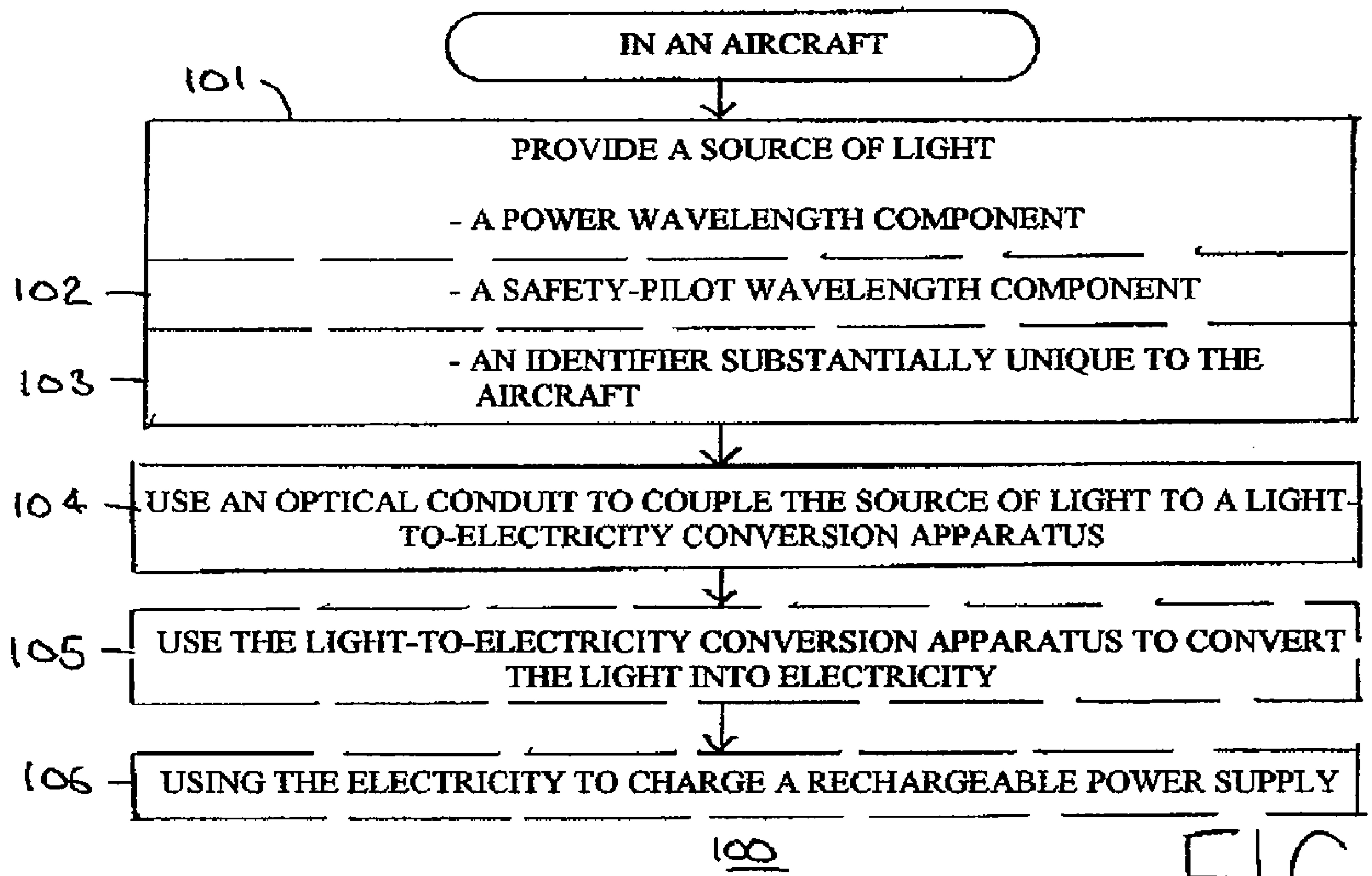
IN AN AIRCRAFT
101
PROVIDE A SOURCE OF LIGHT
- A POWER WAVELENGTH COMPONENT
102
- A SAFETY-PILOT WAVELENGTH COMPONENT
103
- AN IDENTIFIER SUBSTANTIALLY UNIQUE TO THE AIRCRAFT
104
USE AN OPTICAL CONDUIT TO COUPLE THE SOURCE OF LIGHT TO A LIGHT-TO-ELECTRICITY CONVERSION APPARATUS
105
USE THE LIGHT-TO-ELECTRICITY CONVERSION APPARATUS TO CONVERT THE LIGHT INTO ELECTRICITY
106
USING THE ELECTRICITY TO CHARGE A RECHARGEABLE POWER SUPPLY
100

FIG. 1

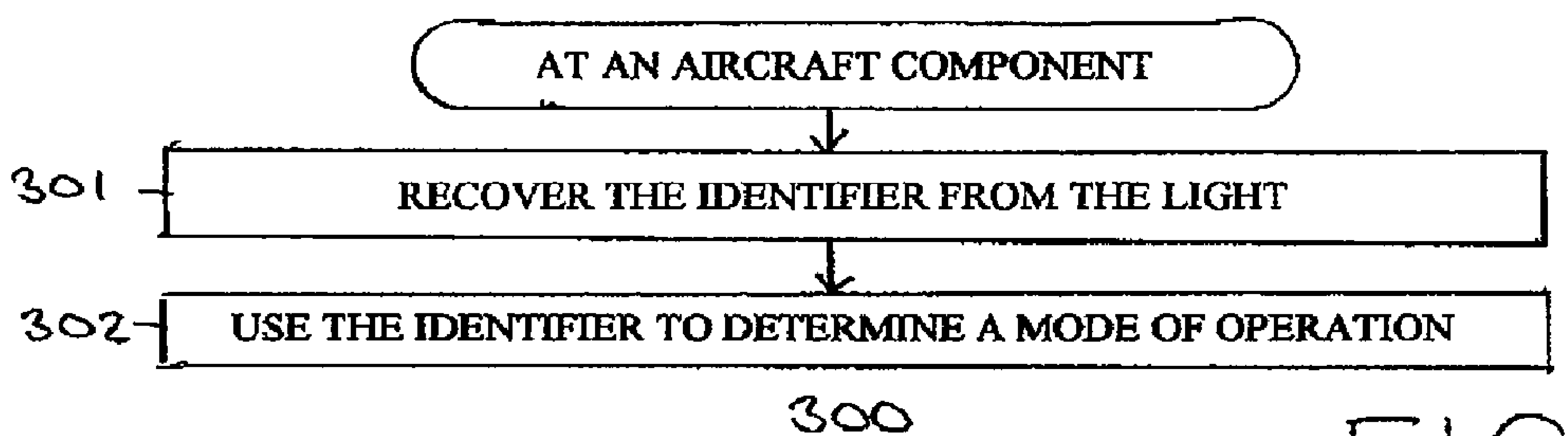
AT AN AIRCRAFT COMPONENT
301
RECOVER THE IDENTIFIER FROM THE LIGHT
302
USE THE IDENTIFIER TO DETERMINE A MODE OF OPERATION
300

FIG. 3

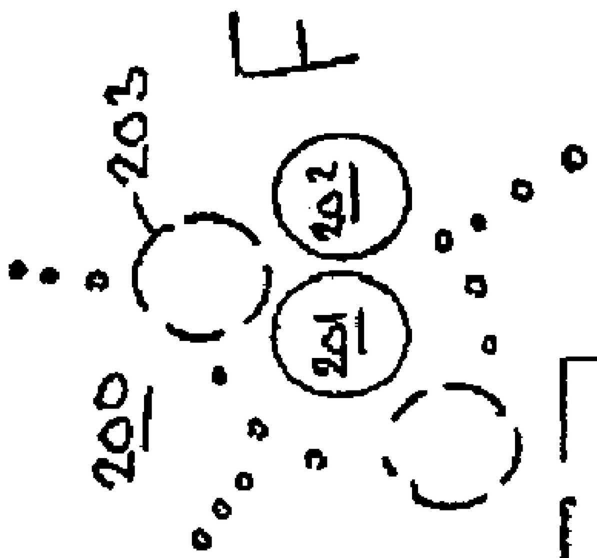
200
201
202
203

FIG. 2

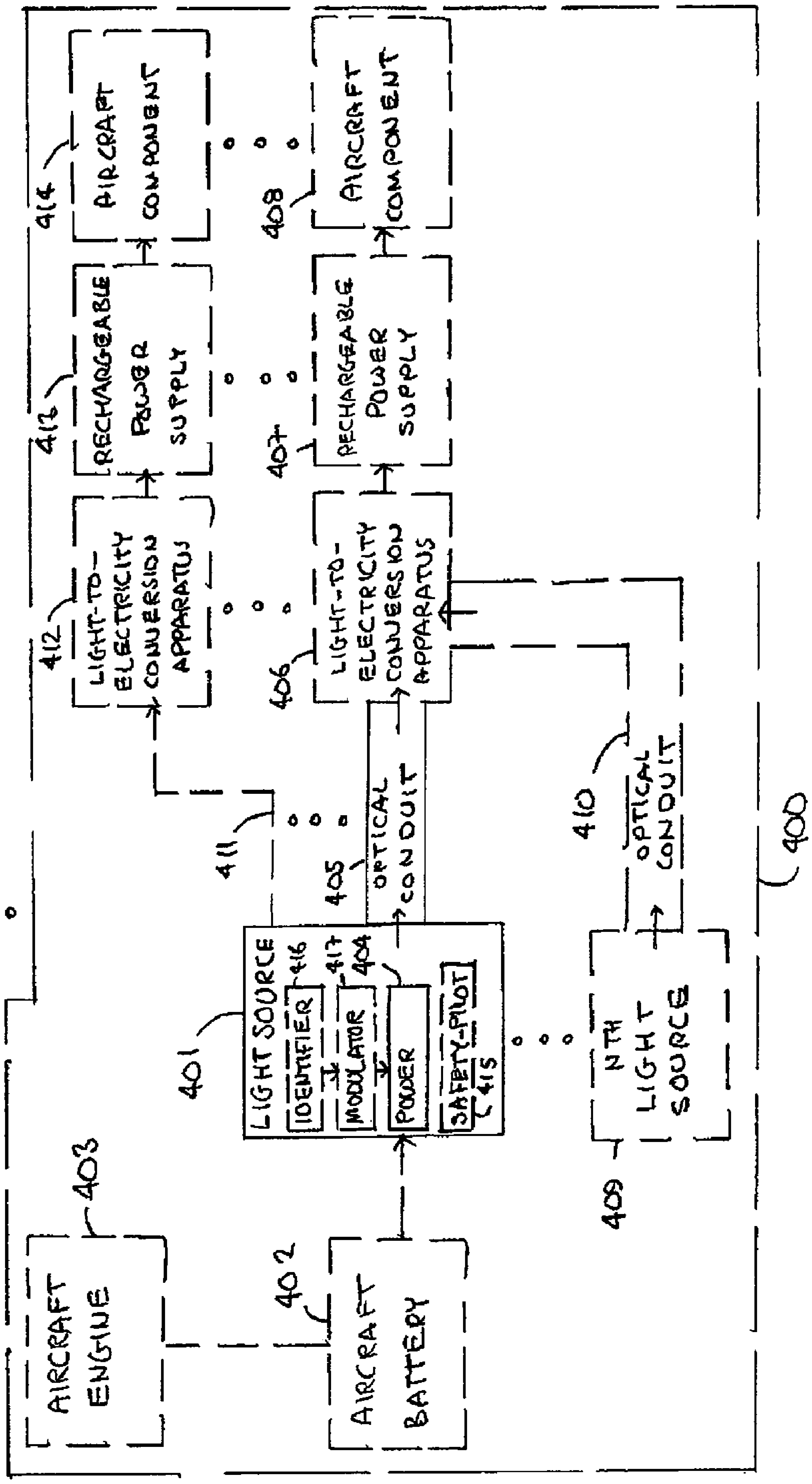
AIRCRAFT ENGINE
403
AIRCRAFT BATTERY
402
LIGHT SOURCE
401
IDENTIFIER
416
MODULATOR
417
POWER
404
SAFETY-PILOT
415
OPTICAL CONDUIT
405
411
NTH LIGHT SOURCE
409
OPTICAL CONDUIT
410
LIGHT-TO-ELECTRICITY CONVERSION APPARATUS
412
LIGHT-TO-ELECTRICITY CONVERSION APPARATUS
406
RECHARGEABLE POWER SUPPLY
412
RECHARGEABLE POWER SUPPLY
407
AIRCRAFT COMPONENT
414
AIRCRAFT COMPONENT
408
400

FIG. 4

APPARATUS AND METHOD PERTAINING TO PROVISION OF A SUBSTANTIALLY UNIQUE AIRCRAFT IDENTIFIER VIA A SOURCE OF POWER

RELATED APPLICATION(S)

This application is a continuation of U.S. patent application Ser. No. 12/430,437 entitled APPARATUS AND METHOD PERTAINING TO LIGHT-BASED POWER DISTRIBUTION IN A VEHICLE as was filed on Apr. 27, 2009 which is a continuation of U.S. patent application Ser. No. 11/549,887 entitled APPARATUS AND METHOD PERTAINING TO LIGHT-BASED POWER DISTRIBUTION IN A VEHICLE and filed on Oct. 16, 2006.

TECHNICAL FIELD

This invention relates generally to light and the use thereof in a vehicular context.

BACKGROUND

Vehicles of various kinds, including terrestrial, marine, and flying vehicles are well known in the art. Such vehicles are typically, and increasingly, equipped with a wide variety of electrically powered vehicular components. Such components can and do serve a wide range of purposes that range from mission-critical to mere convenience or comfort. Such electrically powered vehicular components, in turn, require a source of electric power.

In many cases, at least some of these components are relatively fungible across platforms. That is, a given component may be installable and operable in a number of different vehicles. In some application settings, this unfettered fungibility may be acceptable or even desired. In other application settings, however, such an approach can lead to problems.

For example, there can be important inventory-control and/or safety reasons that are at odds with such an approach. It can be highly undesirable or even dangerous for uninformed, negligent, or even willful maintenance personnel, for example, to remove a given component from one aircraft and install that component in another aircraft without appropriate consideration of such an action. While established rules and procedures regarding the conduct of such affairs can be of some assistance in this regard, the ready fungibility of such components nevertheless offers, at best, an error prone circumstance with little tolerance for mischief when it occurs.

BRIEF DESCRIPTION OF THE DRAWINGS

The above needs are at least partially met through provision of the apparatus and method pertaining to provision of a substantially unique aircraft identifier via a source of power described in the following detailed description, particularly when studied in conjunction with the drawings, wherein:

FIG. **1** comprises a flow diagram as configured in accordance with various embodiments of the invention;

FIG. **2** comprises a schematic side elevational view as configured in accordance with various embodiments of the invention;

FIG. **3** comprises a flow diagram as configured in accordance with various embodiments of the invention; and

FIG. **4** comprises a block diagram as configured in accordance with various embodiments of the invention.

Skilled artisans will appreciate that elements in the figures are illustrated for simplicity and clarity and have not necessarily been drawn to scale. For example, the dimensions and/or relative positioning of some of the elements in the figures may be exaggerated relative to other elements to help to improve understanding of various embodiments of the present invention. Also, common but well-understood elements that are useful or necessary in a commercially feasible embodiment are often not depicted in order to facilitate a less obstructed view of these various embodiments of the present invention. It will further be appreciated that certain actions and/or steps may be described or depicted in a particular order of occurrence while those skilled in the art will understand that such specificity with respect to sequence is not actually required. It will also be understood that the terms and expressions used herein have the ordinary meaning as is accorded to such terms and expressions with respect to their corresponding respective areas of inquiry and study except where specific meanings have otherwise been set forth herein.

DETAILED DESCRIPTION

Generally speaking, pursuant to these various embodiments, a vehicle such as an aircraft is provided with a source of power having a power output such as a source of light. This power output can then be combined with an identifier that is substantially unique to the aircraft. An optical conduit can then be used to couple this source of light to a light-to-electricity conversion apparatus. So configured, the optical conduit delivers light from this source of light to the light-to-electricity conversion apparatus such that the light source then serves as a source of electricity in the vehicle and as a source of a substantially unique identifier as corresponds to the vehicle is available for such use as may be appropriate.

Such an approach can permit a given vehicle component to itself determine whether it has been installed in an authorized application setting as a function, at least in part, of the substantially unique identifier. This, in turn, can lead to increased control with respect to the use and installation of such components and hence improved inventory control, safety, and the like.

These and other benefits may become clearer upon making a thorough review and study of the following detailed description. Referring now to the drawings, and in particular to FIG. **1**, a process **100** illustrative of these teachings will first be presented. These teachings are generally applicable in a wide variety of settings including both mobile and non-moving applications. For the sake of example this process **100** will be presented in conjunction with an aircraft application setting. Those skilled in the art will understand that this example is intended only as a illustrative case and is not to be taken as a suggestion that these teachings are limited in this regard.

This process **100** provides for provision **101** of a source of light. By one approach, this source of light comprises, at least in part, a power wavelength component. As will be described below, this power wavelength component will serve to excite a corresponding light-to-electricity conversion apparatus. Such a power wavelength component can therefore comprise, for example, light having a wavelength (or a range of wavelengths) that is particularly stimulative for certain photonically-responsive materials.

In this regard, at present, certain non-visible or substantially non-visible wavelengths of light are particularly appropriate for such service. Existing materials of value as known in the art, for example, are particularly efficient when excited by light having a wavelength of about 808 nanometers (which lies in the infrared range). If desired, however, visible light (such as white light having a wavelength in the range of 450 to 700 nanometers) can be used with at least some photonically-based converters.

Those skilled in the art will also recognize that these teachings will be equally applicable to light having other wavelengths (such as ultraviolet, far infrared, or the like) as materials are developed and introduced that are photonically-excitable at those other wavelengths. It will also be understood by those skilled in the art that this source of light can itself comprise a source of a plurality of different wavelengths where each of the wavelengths can be intended and applied as a power component.

This source of light can be self-powered (using, for example, a dedicated power source such as a battery, alternator, or the like) or can rely, in whole or in part, upon another power source. For example, by one approach, this source of light can rely upon power from an aircraft engine. In such a case, for example, the aircraft engine may serve to power an alternator that provides corresponding electricity to the source of light. As another example, the aircraft engine may serve to power a charging apparatus that in turn maintains a charge on a battery that provides necessary power to the source of light. Such approaches are generally well understood in the art and require no further elaboration here.

Non-visible (or substantially non-visible) light, particularly when employed as a power component, can potentially present a concern for service personnel or the like. In particular, being non-visible (or substantially non-visible), such light will not necessarily invoke an automatic iris response in the eye of a beholder that would cause the iris to at least partially close. In some cases, however, this power component light may nevertheless be capable of causing at least temporary eye-related distress. Therefore, if desired, this process **100** will optionally accommodate also providing a safety-pilot wavelength component **102** in addition to the aforementioned power wavelength component.

By one approach, this safety-pilot wavelength component **102** can comprise a visible light component. Being visible, this component can serve to invoke an iris response and/or a useful perception or reaction on the part of an observer. This, in turn, can aid in preventing the occurrence of any problems as might otherwise occur when gazing too long at the power wavelength component provided by the source of light.

Any of a variety of colors can be considered for application in this regard. For example, a red or yellow color might be employed as such colors are often associated with a dangerous or cautionary situation in many cultures. As another example, a green colored light (having, for example, a wavelength of about 532 nanometers) could serve in this regard. Green light sources (such as green laser diodes) are relatively inexpensive and have the further benefit of being perceived by the average human as being brighter than other colors of similar objective brightness.

In general, this safety-pilot wavelength component can comprise a constant component of the source of light. If desired, however, the brightness of this component can be periodically varied (and/or the safety-pilot component can be switched on and off at regular or semi-regular intervals) in order to provide a pulsed safety-pilot wavelength component. This pulsed representation may be useful in some application settings to serve as a human-perceptible alarm or cautionary signal of sorts. It would also be possible to switch between different colors of visible light (such as between green and red) to provide a visual warning to alert an onlooker that they should not continue to gaze into the source of light.

This process **100** then also provides an identifier **103** that is substantially unique to the application setting. When that application setting comprises an aircraft, for example, this identifier can comprise a unique numeric or alphanumeric string that is assigned to only one given aircraft (by, for example, a given manufacturer, a given aircraft operator, a given regulatory agency, a given industry group, or the like). Such an indicator can be modulated onto a wavelength carrier that serves only to bear this information or may, if desired, be modulated onto the aforementioned power wavelength component and/or the safety-pilot wavelength component. The use and application of such an identifier in this context will be further discussed in the following description.

This process **100** then provides for using **104** an optical conduit to couple this source of light to a light-to-electricity conversion apparatus. The light-to-electricity conversion apparatus can comprise any known or hereafter developed material and/or platform that serves to convert impinging light into electricity. Such information comprises a well-understood area of endeavor. Accordingly, for the sake of brevity and clarity, this description will not provide further needless elaboration in this regard.

The optical conduit itself can comprise any of a wide variety of materials and form factors. By one approach, hard-form glass or plastic waveguides of various kinds could be employed for this purpose. For many application settings, however, optical fibers will serve as a useful mechanism in this regard. Optical fibers of a variety of materials can serve for this purpose. When weight-savings and cost represent important design considerations, however, as with an aircraft application setting, optical fibers comprised of polymer materials (such as plastic) may be particularly appropriate. Such optical fibers are well known in the art and require no further description here.

Particularly in consideration of the power wavelength component to be conveyed, these optical fibers can be of relatively large diameter. In typical prior art applications, very small diameter fibers are used to send the light in such regards, (for example, 50 um or 62.5 um Single-Mode glass fibers). In the present teachings, however, optical fibers having a diameter from about 0.1 to about 5 millimeters will work well for these purposes (with optical fibers having a diameter of about 1 millimeter being quite useful, for example, in a number of application settings). Such relatively wide dimensions have a particular benefit in that they have thousands of times the cross-sectional area of small diameter fibers. This, in turn, results in a relatively low power density, that is, total power per unit area of cross-sectional fiber core, and hence individually pose a relatively reduced risk of injury to the eye of a beholder. It also reduces greatly, and in some cases completely eliminates, the risk of an open fiber tip acting as an ignition source for fuel vapors, carpet or other fabric, or anything else that is flammable inside a vehicle.

If desired, this optical conduit can comprise a plurality of optical fibers. To illustrate, and referring momentarily to FIG. **2**, a given optical fiber **200** can comprise at least two optical fibers **201** and **202** (which may be of equal, or differing, sized diameters). As suggested by the optical fiber(s) **203** that are shown with phantom lines as well as the ellipsis', an additional number of optical fibers can be provided as desired. For example, for many application settings, such an optical conduit **200** can be comprised of from about 2 to about 100 such optical fibers.

So configured (and returning again to FIG. **1**), this process **100** provides for light (and particularly light having a power wavelength component) to be transported via an optical conduit to a light-to-electricity conversion apparatus. This, in turn, permits power to be distributed throughout an application setting (such as an aircraft) without requiring a concurrent distribution of costly, weighty electrical conductors.

As shown, this process **100** will also optionally accommodate using **105** this light-to-electricity conversion apparatus to convert such light into electricity and to use **106** this electricity to, in turn, charge a rechargeable power supply. The latter can then comprise the primary source of electricity for one or more corresponding electrically powered components.

So configured, and referring now to FIG. **3**, these teachings will also optionally accommodate a process **300** whereby the aforementioned identifier is recovered **301** from the light and then used **302** to determine a particular mode of operation. This recovery can be accomplished using, for example, known photosensitive detectors/receivers that are capable of detecting and demodulating the identifier content from the light-based carrier(s).

As a more specific example in this regard, a given aircraft can have a corresponding unique identifier previously assigned thereto. Given aircraft components can, in turn, be pre-programmed for installation and operation in a given aircraft by installing that unique identifier in the aircraft component (for example, by storing that unique identifier in an accessible memory). So configured, such an aircraft component, upon recovering the unique identifier provided via light as described above, can then compare that recovered value with its previously assigned value to determine, for example, whether it has authorization to operate in this particular aircraft. Upon concluding that such is not the case, such an aircraft component could then automatically respond by at least partially diminishing one or more of its operating capabilities.

Such a capability could serve to deter willful or negligent maintenance personnel from installing inappropriate equipment when conducting routine or emergency maintenance services. For example, such functionality would discourage service personnel from inappropriately removing a given component from one aircraft and installing that component in another aircraft without appropriate authorization.

The specifics of this option can of course be varied to suit the needs and/or opportunities presented by a given application setting. As one example in this regard, if desired, a given aircraft component might be preauthorized to accept a particular range of identifiers. By this approach, a given component might be preauthorized for installation and use in, say, five specific aircraft in a given fleet while still discouraging such installations and use in remaining vehicles within that fleet. Such a range of identifiers could be identified as a table or list of authorized identifiers or, if desired, as a range of identifiers bounded by lower and upper identifier values.

Those skilled in the art will appreciate that the above-described processes are readily enabled using any of a wide variety of available and/or readily configured platforms, including partially or wholly programmable platforms as are known in the art or dedicated purpose platforms as may be desired for some applications. Referring now to FIG. **4**, an illustrative approach to such a platform will now be provided.

In this example the operative apparatus comprises a vehicle. In particular, and again for the purpose of illustration, this operative apparatus comprises an aircraft **400** (such as, but not limited to, a single or multi-engine fixed wing aircraft as are well known and understood in the art). If desired, this aircraft can be configured and arranged to optically distribute data to and from a variety of electrically powered aircraft components. Such optical data distribution can be achieved, for example, by use of the teachings contained in the above-reference patent applications. If desired, this aircraft can be further configured and arranged in this regard to optically distribute data to and from the electrically powered aircraft components independent of the power distribution optical conduit discussed above and described below.

In accordance with the teachings set forth herein, this aircraft **400** includes a source of power that comprises, in this example, a source of light **401**. This source of light **401** can operably couple, if desired, to an aircraft battery **402** (such as an aircraft main battery) which may, in turn, be operably coupled to an aircraft engine **403** that serves to maintain a charge on the aircraft battery **402**. Such engines, batteries, and the like are well known in the art. As the present teachings are not overly sensitive to any particular selections in this regard, for the sake of brevity further details regarding such components will not be provided here.

This source of light **401** comprises, in this embodiment, at least a power wavelength component source **404** (such as, but not limited to, any of a number of solid-state light emitting devices such as light emitting diodes, lasers, or the like). This source of light **401** operably couples via an optical conduit **405** (for example, as described above) to a light-to-electricity conversion apparatus **406** of choice. As noted above, this light-to-electricity conversion apparatus **406** serves to convert at least the power wavelength component (or components) as sourced by the source of light **401** into electricity. By one approach, and as suggested by the illustration, this light-to-electricity conversion apparatus **406** can optionally operably couple to a rechargeable power supply **407**. So configured and arranged, electricity as provided by the light-to-electricity conversion apparatus **406** can serve to charge the rechargeable power supply **407**.

The rechargeable power supply **407** can then couple, in turn, to a corresponding aircraft component **408**. Virtually any electrically powered aircraft component can be served in this manner with some examples comprising avionics components, electro-servo mechanisms, displays, and so forth. This can comprise, if desired, a one-to-one configuration such that a single such rechargeable power supply serves to power only a single corresponding aircraft component. In the alternative, if desired, a single rechargeable power supply can serve to power a plurality of aircraft components. It would also be possible, if desired, to couple a plurality of rechargeable power supplies in parallel to a single aircraft component (in order to provide, for example, a redundant supply capacity).

If desired, these teachings will accommodate providing more than one such independent light source (as represented in the illustration by an Nth light source **409** (where "N" will be understood to comprise an integer value greater than one). By one approach, and as suggested by the illustration, two or more such sources of light can feed one or more of the same light-to-electricity conversion apparatuses. So configured, the light-to-electricity conversion apparatus has the benefit of redundant power sources and/or has a greater amount of instantaneous power available in the form of additional light. It would also be possible to use such additional light sources to power additional aircraft components independent of one another. To illustrate, a first light source could serve to power a first group of five aircraft components and a second light source could serve to power a second group of five other aircraft components.

If desired, and again as suggested in the illustration, one can also optionally couple more than one optical conduit to a given source of light (as suggested by the optical conduit denoted by reference numeral **411**). Such additional optical conduits **411** can couple in a similar manner to other light-to-electricity conversion apparatuses **412**, corresponding rechargeable power supplies **413**, and aircraft components

414 as appropriate. So configured, those skilled in the art will recognize the resultant power distribution architecture as comprising a star distribution pattern. With such a configuration, severing of any one of the optical conduits will not have any effect upon the operability of the remaining optical conduits. It would also be possible for separate whole sets of light sources and sinks (i.e., in this illustrative embodiments, the light-to-electricity converter apparatuses) to be cross-coupled for fail-functional operation.

By one approach, the above-described rechargeable power supplies are each located relatively close to their corresponding aircraft component. In fact, if desired, such a capability can comprise a native capability of the aircraft component when the rechargeable power supply comprises an integral part of the aircraft component. This same approach can be taken with the light-to-electricity conversion apparatus as well, if desired.

It is not necessary that the source of light (either alone or in the aggregate with other sources of light) be capable of providing an instantaneous amount of energy that is capable of powering, in real time, all of the electrically powered aircraft components as may be coupled thereto. A properly sized rechargeable power supply should ensure that sufficient energy is available to operate such components for the duration of a given desired or planned operating period (such as a given flight of the aircraft).

As noted above, the source of light **401** can also serve to provide and combine a safety-pilot wavelength component **415** with the power wavelength component **404**. So configured, and particularly when the power wavelength component **404** comprises a substantially or fully non-visible wavelength (such as an infrared wavelength) as described above, this safety-pilot wavelength component **415** (which can comprise a visible light of choice) can serve to warning onlookers to avoid looking into the light output by the source of light **401** while also serving to invoke a reflexive closure of the pupil in order to afford some degree of natural eye protection as well.

Also as noted above, the source of light **401** can be provided with an identifier (that may be stored, for example, in a corresponding memory **416**) that is unique, or substantially unique, to the aircraft **400** itself. This identifier can be provided, for example, to a modulator **417** that modulates a light carrier (such as, but not limited to, the power wavelength component **404**, the safety-pilot wavelength component **415**, or another light carrier of choice) with the identifier information. Various modulators and types of modulation are known in the art and may be applied here as appropriate. The effective data rate can comprise, if desired, a relatively low data rate. It will also be understood that such information can be transmitted on a substantially continuous, repeated basis or can be transmitted less frequently as desired.

Those skilled in the art will recognize and understand that such an apparatus **400** may be comprised of a plurality of physically distinct elements as is suggested by the illustration shown in FIG. **4**. It is also possible, however, to view this illustration as comprising a logical view, in which case one or more of these elements can be enabled and realized via a shared platform. It will also be understood that such a shared platform may comprise a wholly or at least partially programmable platform as are known in the art.

So configured, those skilled in the art will recognize and appreciate that these teachings provide a highly leveragable basis for distributing power throughout an application setting of choice. These teachings are readily implemented in an economically feasible manner and can easily scale to accommodate a wide range of needs and requirements. It will further be appreciated that these teachings can lead to significant weight reductions as electrical conductors and their corresponding couplers are removed as a design requirement. These teachings also serve to permit a relatively safe use of light as power source, in part through selection of appropriately sized optical fibers and in part through use of a safety-pilot wavelength component. Those skilled in the art will also recognize the value of providing a unique identifier in conjunction with the delivery of light throughout an application setting.

Those skilled in the art will recognize that a wide variety of modifications, alterations, and combinations can be made with respect to the above described embodiments without departing from the spirit and scope of the invention, and that such modifications, alterations, and combinations are to be viewed as being within the ambit of the inventive concept. As but one illustration in this regard, if desired, the aforementioned source of light can be further configured and arranged to source yet another component of light. This additional component of light might comprise, for example, a data-bearing component (to facilitate the transmission and/or reception of operating information by the above-mentioned components), a heating component (such as infrared light in the range of about 1,000 to about 5,000 nanometers) that can be used as a heating source (for example, to warm unduly cooled avionics equipment, cockpit displays, and so forth), or even a surface illumination end use component (as when the additional component comprises white light that serves as backlight illumination for a cockpit display).

We claim:

1. A method comprising:
in an aircraft:
providing a source of power having a power output;
combining the power output with an identifier that is substantially unique to the aircraft.

2. The method of claim **1** wherein the source of power comprises a source of light.

3. The method of claim **2** wherein the source of light comprises a source of substantially non-visible light.

4. The method of claim **1** wherein the identifier comprises at least one of numeric and alphabetic characters as comprise an identifier that has been previously assigned to the aircraft.

5. The method of claim **1** wherein combining the power output with an identifier comprises, at least in part, modulating the power output with information that corresponds to the identifier.

6. The method of claim **1** wherein the source of power comprises a source of light and further comprising:
using an optical conduit to couple the source of light to a light-to-electricity conversion apparatus;
such that light from the source of light is delivered to the light-to-electricity conversion apparatus via the optical conduit and is used to provide a source of electricity in the aircraft.

7. The method of claim **6** further comprising:
at an aircraft component that is operably coupled to the light-to-electricity conversion apparatus:
recovering the identifier from the light;
using the identifier to determine a mode of operation.

8. The method of claim **7** wherein using the identifier to determine a mode of operation comprises using the identifier to determine whether the aircraft component has authorization to operate in the aircraft.

9. The method of claim **8** wherein using the identifier to determine a mode of operation further comprises determining to at least partially diminish an operating capability of the aircraft component when the aircraft component does not have authorization to operate in the aircraft.

10. A aircraft power distribution system comprising:

in an aircraft:

a memory having an identifier as corresponds substantially uniquely to the aircraft stored therein;

a source of power that is operably coupled to the memory and having a power output that comprises, in part, the identifier that is substantially unique to the aircraft.

11. The aircraft power distribution system of claim **10** wherein the source of power comprises a source of light.

12. The aircraft power distribution system of claim **11** wherein the source of light comprises a source of substantially non-visible light.

13. The aircraft power distribution system of claim **10** wherein the identifier comprises at least one of numeric and alphabetic characters as comprise an identifier that has been previously assigned to the aircraft.

14. The aircraft power distribution system of claim **10** further comprising; a modulator that modulates the power output with information that corresponds to the identifier.

15. The aircraft power distribution system of claim **10** further comprising:

an optical conduit that operably couples the power output to a light-to-electricity conversion apparatus;

such that light from source of power is delivered to the light-to-electricity conversion apparatus via the optical conduit and is used to provide a source of electricity in the aircraft.

16. A method comprising:

in an aircraft component:

receiving a power signal from an aircraft-based source of power;

recovering an identifier as corresponds to an aircraft within which the aircraft component is installed from the light;

using the identifier to determine a mode of operation.

17. The method of claim **16** wherein using the identifier to determine a mode of operation comprises using the identifier to determine whether the aircraft component has authorization to operate in the aircraft.

18. The method of claim **17** wherein using the identifier to determine a mode of operation further comprises determining to at least partially diminish an operating capability of the aircraft component when the aircraft component does not have authorization to operate in the aircraft.

19. An aircraft comprising:

a memory having an identifier as corresponds substantially uniquely to the aircraft stored therein;

a source of power that is operably coupled to the memory and having a power output that comprises, in part, the identifier that is substantially unique to the aircraft.

20. The aircraft of claim **19** wherein the source of power comprises a source of light.

21. The aircraft of claim **20** further comprising:

a plurality of electrically powered aircraft components that are operably coupled to and powered by the source of light.

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